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(54) CONVOLUTION CODING DATA DECODER

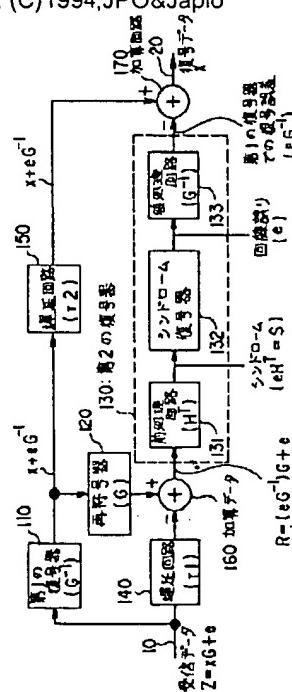
value (e) to obtain a decoded error after simple decoding.

(57) Abstract:

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PURPOSE: To improve the decoding accuracy of transmission information data, that is, convolution coding data by generating a syndrome from difference data between re-coding data and reception data as a preprocessing, estimating a line error through the application of the syndrome decoding method and implementing inverse coding at a post-processing.

CONSTITUTION: A simple decoder 110 is used for a 1st decoder and a main decoder 130 is used for a 2nd decoder. An inverse coder  $G^{-1}$  is used for the decoder 110 similarly to a conventional decoder, a delay time  $\tau_1$  of a delay circuit 140 is set to zero, and the decoder 130 consists of a pre-processing circuit 131, a syndrome decoder 132, and a post-processing circuit 133. The pre-processing circuit 131 generates a corresponding syndrome to difference data between a re-coded data and reception data, that is, input data to the decoder 130, then a line noise (e) is estimated by allowing the pre-processing circuit 131 generates a corresponding syndrome and using the decoder 132 to generate a syndrome with the syndrome decoding method for a convolution code. Then the post-processing circuit 133 applies post-processing to the estimated



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